

REMARKS

These amendment and remarks are being filed in response to the Office Action dated December 15, 2008. For the following reasons, this application should be allowed and the case passed to issue. No new matter is introduced by this amendment. Support for new claim 13 is found in the specification, including page 7, lines 8-16.

Claims 1-13 are pending in this application. Claims 1-12 have been rejected. Claim 13 is newly added in this response.

Objection to the Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. Allegedly there is no explicit recitation of a variance in the circulation resistance as recited in claim 4. This objection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The specification provides support for claim 4. Claim 4 requires that the unit cells comprise a first unit cell situated in a center portion in the lamination direction of the laminate, and a second unit cell situated in another portion including ends of the laminate, and a circulation resistance of the coolant passage of the first unit cell is set to be less than a circulation resistance of the cooling passage of the second unit cell. The specification at page 6, the last line through page 7, line 3, describes: "[t]he coolant passage 11b is formed of unit cells 17b disposed in the center portion of the laminate 170 in the lamination direction. The coolant passage 11a is formed in unit cells 17a disposed in another portion including ends of the laminate 170." The feature that the coolant passages 11a is formed in the first unit cell 17b which is situated in a center portion in the lamination direction of the laminate and the coolant passages 11b is formed

in the second unit cell 17a situated in another portion including ends of the laminate 170 of the pending claim 4 is fully readable on the above description.

Further, page 7, lines 8-16, describe:

As shown in FIG. 2B, the coolant passage 11b connects the coolant supply manifold 12 and the coolant discharge manifold 13 by two passages aligned with the circumference of the unit cell 17b, and one passage formed in the direction of a diagonal line. The three passages forming the coolant passage 11b are shorter than the coolant passage 11a, and its cross-section is larger than the cross-section of the coolant passage 11a. The coolant passage 11b is constructed this way in order to promote heat exchange between the unit cells 17b and the coolant, and keep the pressure loss accompanying circulation small.

Another feature of claim 4 is that a circulation resistance of the coolant passage (11b) of the first unit cell (17b) is set to be less than a circulation resistance of the cooling passage (11a) of the second unit cell (17a), is also supported by the above description, because the coolant passages 11b having a shorter length and larger cross-section than the coolant passages 11a inherently have a less circulation resistance than the coolant passages 11a. Therefore, claim 4 is fully supported by the present specification.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-4 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii (US 6,686,085) in view of Yang (US 6,596,426). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

The Examiner asserted that Fujii discloses a fuel cell system comprising a laminate of unit cells, each unit comprising a coolant passage, a coolant supply manifold 64a passing through the laminate, which distributes coolant from a coolant source provided outside the laminate to the coolant passages of the unit cells; a coolant discharge manifold 64b passing through the

laminate, which recovers coolant from the coolant passages of the unit cells to the coolant recirculation device. The Examiner admitted that Fujii does not teach the particulars of the coolant recirculation device of a valve which shuts off circulation of the coolant between the laminate and the coolant recirculation device; and a bypass passage connecting the coolant supply manifold and the coolant discharge manifold, wherein the bypass passage has a larger cross-section than a cross-section of the coolant passages. The Examiner averred that Yang discloses external coolant supplies which further include a valve for controlling the flow of coolant between the recirculation device and the fuel cell coolant passages. The Examiner also stated this system includes a valve between the main coolant system and a bypass line 132 on the opposite end of the fuel cell stack from the main coolant system components.

The combination of Fujii and Yang, however, does not suggest the claimed fuel cell system because neither Fujii nor Yang disclose a bypass passage connecting the coolant supply manifold and the coolant discharge manifold, wherein the **bypass passage has a larger cross-section than a cross-section of the coolant passages**, as required by claim 1.

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, There is no suggestion in Fujii or Yang to modify the fuel cell system of Fujii to include a bypass passage connecting the coolant supply manifold and the coolant discharge manifold, wherein the bypass passage has a larger cross-section than a cross-section of the coolant passages, as required by claim 1, nor does common sense dictate such modifications. The Examiner has not provided

any evidence that there would be any obvious benefit in making such a modification of Lee. *See KSR Int'l Co. v. Teleflex, Inc.*, 500 U.S. ____ (No. 04-1350, April 30, 2007) at 20.

The only teaching of the claimed fuel cell system is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii in view of Yang and further in view of Raiser (US 2002/0192521).

Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii in view of Yang and further in view of Kawatsu (US 5,677,073) or Cutright (US 2002/0160239).

Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii in view of Yang and either Kawatsu or Cutright and further in view of Wilkinson (US 6,682,839) and JP 59-184467.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii in view of Yang and further in view of Sanderson (US 5,085,949) and JP 59-184467.

These rejection are traversed, and reconsideration and withdrawal thereof respectfully requested. The combination of Fujii and Yang with either Raiser, Kawatsu, Cutright, Wilkinson, JP 59-184467, or Sanderson does not suggest the claimed fuel cell system because Raiser, Kawatsu, Cutright, Wilkinson, and JP 59-184467 do not cure the deficiencies of Fujii and Yang. Raiser, Kawatsu, Cutright, Wilkinson, JP 59-184467, and Sanderson do not suggest a bypass passage connecting the coolant supply manifold and the coolant discharge manifold, wherein the bypass passage has a larger cross-section than a cross-section of the coolant passages.

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The dependent claims are allowable for at least the same reasons as claim 1 and further distinguish the claimed fuel cell system. For example, new claim 13 requires a pair of bypass passages are formed in the laminate, one of the bypass passages connecting an end of the coolant supply manifold and an end of the coolant discharge manifold, and the other of the bypass passages connecting another end of the coolant supply manifold and another end of the coolant discharge manifold, wherein the bypass passages have a larger cross-section than a cross-section of the coolant passages. The cited prior art does not suggest the claimed fuel cell system with these additional limitations.

Allowable Subject Matter

Claim 5 was objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Applicant greatly appreciates the indication of allowable subject matter. It is believed that no further amendment of the claims is necessary as the claims are believed to be allowable for the reasons explained above.

In light of the above Amendment and Remarks, this application should be allowed and the case passed to issue. If there are any questions regarding these remarks or the application in general, a telephone call to the undersigned would be appreciated to expedite prosecution of the application.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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